Spectromicroscopy at Elettra: recent achievements and future projects

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The synchrotron laboratory ELETTRA has one of the most extensive programs in the field of x-ray spectromicroscopy in Europe with three photoemission microscopes using different approaches to get sub-micrometer spatial resolution. Selected results obtained at ELETTRA will be used to illustrate the recent achievements in identification of spatial variations in the composition and electronic properties of model and fabricated semiconductor interfaces, including band-bending variations, characterization of domain structures of magnetic systems, discrimination of local chemical processes at morphologically complex surfaces, examination of mass transport phenomena due to thermal diffusion, electromigration or surface reactions etc.[1-4].

The outlook will emphasize on the EU-funded project for building a X-ray microscope, which will allow new class of experiments in various research domains by combining the potential of full-field imaging transmission microscopy for morphological and dynamic studies with the spectroscopic potential of the scanning x-ray microscopy [5].

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